

the temperature of the reforming portion is not lower than T1 and the temperature of the vaporizing portion is not lower than T2.

2. The method of claim 1, wherein the first, second and third reforming reactions have predetermined reforming conditions, and the first reforming reaction has at least one predetermined reforming condition different from the corresponding predetermined reforming condition of at least one of the second and third reforming reactions.

3. The method of claim 2, wherein the predetermined reforming conditions are autothermal reforming conditions and the first reforming reaction has at least one autothermal reforming condition different from that of the second reforming reaction.

4. The method of claim 3, wherein the autothermal reforming conditions comprise at least the amount of a reforming target gas supplied from a reforming target gas supply portion and the amount of oxygen-containing gas supplied from an oxygen-containing gas supply portion.

5. The method of claim 4, further comprising:

supplying reforming target gas so that the amount of reforming target gas supply for the autothermal reforming is the same between the first reforming reaction and the second reforming reaction; and

supplying oxygen-containing gas so that the ratio of the amount of oxygen-containing gas supply to the reforming portion to the amount of reforming target gas supply to the reforming portion for the autothermal reforming by the second reforming reaction is smaller than that for the autothermal reforming by the first reforming reaction.

6. The method of claim 2, wherein the predetermined reforming conditions are steam reforming conditions and the first reforming reaction has a steam reforming condition different from that of the third reforming reaction.

7. The method of claim 6, further comprising:

supplying steam so that the amount of steam supply to the reforming portion for the autothermal reforming by the second reforming reaction is larger than that for the autothermal reforming by the first reforming reaction, and so that the amount of steam supply to the reforming portion for the steam reforming by the third reforming reaction is larger than that for steam reforming by the first reforming reaction.

8. The method of claim 2, wherein the predetermined reforming conditions are autothermal reforming conditions and steam reforming conditions.

9. The method of claim 8, further comprising:

supplying reforming target gas so that the amount of reforming target gas supply to the reforming portion for the autothermal reforming by the second reforming reaction is smaller than that for the autothermal reforming by the first reforming reaction, and so that the amount of reforming target gas supply to the reforming portion for the steam reforming by the third reforming reaction is smaller than that for the steam reforming by the first reforming reaction.

10. The method of claim 8, further comprising:

supplying oxygen-containing gas so that the amount of oxygen-containing gas supply to fuel cells in the fuel cell apparatus for the autothermal reforming by the second reforming reaction is larger than that for the autothermal reforming by the first reforming reaction, and so that the amount of oxygen-containing gas supply to the fuel cells for the steam reforming by the third reforming reaction is larger than that for the steam reforming by the first reforming reaction.

11. A method for controlling a reforming reaction in a reforming portion of a fuel cell apparatus when the reforming portion is not operating, the method comprising:

measuring a first starting temperature of a reforming portion of a fuel cell apparatus when the fuel cell apparatus starts operation;

measuring a second starting temperature of a vaporizing portion of the fuel cell apparatus when the fuel cell apparatus starts operation; and

starting operation of the reforming reaction by starting an autothermal reforming reaction when the first starting temperature is not lower than T1 and the second starting temperature is lower than T2, where T1 represents a temperature at which the steam reforming reaction can be performed, and T2 represents a temperature at which a predetermined amount of steam can be generated by the steam reforming.

12. The method according to claim 11, further comprising: starting operation of the reforming reaction by starting a steam reforming reaction when the first starting temperature is not lower than T1 and the second starting temperature is not lower than T2.

* * * * *